

What is claimed is:

1. A cleaning article comprising:
a non-woven, three dimensional fibrous web comprised of at least one intertangled organic fiber, the web having a first major surface;
a plurality of organic particles having a Shore A hardness less than 80; and
binder on at least a portion of the first major surface, the binder having a T_g not greater than $+10^{\circ}\text{C}$ and binding the organic particles, at least in part, to the first major surface.
2. A cleaning article according to claim 1, wherein the web is comprised of a plurality of intertangled organic fibers.
3. A cleaning article according to claim 2, wherein the binder is present on at least a majority of the first major surface.
4. A cleaning article according to claim 2, wherein the binder is substantially co-extensive with the first major surface.
5. A cleaning article according to claim 2, wherein the binder binds at least a portion of the fibers together.
6. A cleaning article according to claim 2, wherein said organic particles have a Shore A hardness in the range from 20 to less than 80.

7. A cleaning article according to claim 2, wherein the web has a density in the range from 0.02 g/cm³ to 0.3 g/cm³.

8. A cleaning article according to claim 2, wherein the T_g is in the range from 0°C to -70°C.

9. A cleaning article according to claim 2, wherein the T_g is in the range from -10°C to -70°C.

10. A cleaning article according to claim 2, wherein the T_g is in the range from -20°C to -30°C.

11. A cleaning article according to claim 1, wherein said organic particles have a Shore A hardness in the range from 20 to less than 80.

12. A cleaning article according to claim 1, wherein said organic particles have an aspect ratio in the range from about 1:1 to about 2:1.

13. A cleaning article comprising:

a non-woven, three dimensional fibrous web comprised of at least one intertangled organic fiber, the web having a first major surface;

a plurality of organic particles having a hardness of at least one of a Shore A hardness in the range from 80 to 100 or a Shore D hardness in the range from 30 to 50; and

binder on at least a portion of the first major surface, the binder having a T_g not greater than 0°C and binding the organic particles, at least in part, to the first major surface.

14. A cleaning article according to claim 13, wherein the web is comprised of a plurality of intertangled organic fibers.

15. A cleaning article according to claim 14, wherein the binder is present on at least a majority of the first major surface.

16. A cleaning article according to claim 14, wherein the binder is substantially co-extensive with the first major surface.

17. A cleaning article according to claim 14, wherein the binder binds at least a portion of the fibers together.

18. A cleaning article according to claim 14, wherein the web has a density in the range from 0.02 g/cm^3 to 0.3 g/cm^3 .

19. A cleaning article according to claim 14, wherein the T_g is in the range from 0°C to -70°C .

20. A cleaning article according to claim 14, wherein the T_g is in the range from -10°C to -70°C .

21. A cleaning article according to claim 14, wherein the T_g is in the range from -20°C to -30°C .

22. A cleaning article according to claim 13, wherein said organic particles have an aspect ratio in the range from about 1:1 to about 2:1.

23. A cleaning article comprising:
a foam pad having a first major surface;
a plurality of organic particles having a Shore A hardness less than 80; and
binder on at least a portion of the first major surface, the binder having a T_g not greater than $+10^{\circ}\text{C}$ and binding the organic particles, at least in part, to the first major surface.

24. A cleaning article according to claim 23, wherein the binder is present on at least a majority of the first major surface.

25. A cleaning article according to claim 23, wherein said organic particles have a Shore A hardness in the range from 20 to less than 80.

26. A cleaning article according to claim 23, wherein the binder is substantially co-extensive with the first major surface.

27. A cleaning article according to claim 23, wherein the T_g is in the range from 0°C to -70°C.

28. A cleaning article according to claim 23, wherein the T_g is in the range from -10°C to -70°C.

29. A cleaning article according to claim 23, wherein the T_g is in the range from -20°C to -30°C.

30. A cleaning article according to claim 23, wherein said organic particles have an aspect ratio in the range from about 1:1 to about 2:1.

31. A cleaning article comprising:
a foam pad having a first major surface;
a plurality of organic particles having a hardness of at least one of a Shore A hardness in the range from 80 to 100 or a Shore D hardness in the range from 30 to 50; and
binder on at least a portion of the first major surface, the binder having a T_g not greater than 0°C and binding the organic particles, at least in part, to the first major surface.

32. A cleaning article according to claim 31, wherein the binder is present on at least a majority of the first major surface.

33. A cleaning article according to claim 31, wherein the binder is substantially co-extensive with the first major surface.

34. A cleaning article according to claim 31, wherein the T_g is in the range from 0°C to -70°C.

35. A cleaning article according to claim 31, wherein the T_g is in the range from -10°C to -70°C.

36. A cleaning article according to claim 31, wherein the T_g is in the range from -20°C to -30°C.

37. A cleaning article according to claim 31, wherein said organic particles have an aspect ratio in the range from about 1:1 to about 2:1.

38. A method of cleaning a soiled exterior surface of an aircraft, the method comprising: providing a cleaning article comprising a non-woven, three-dimensional fibrous web, at least 8 mm thick, comprised of at least one intertangled organic fiber, the web having a first major surface and binder on at least a portion of the first major surface, the binder having a T_g not greater than 0°C, said cleaning article further comprising a work surface comprising said binder, and said work surface having a wet kinetic coefficient of friction in the range from 0.3 to 0.9;

frictionally engaging at least a portion of the work surface of the cleaning article with the soiled exterior surface of the aircraft; and

inducing relative motion between the cleaning article and the soiled exterior surface to at least partially dislodge soil from the soiled exterior surface.

39. A method according to claim 38, wherein the web is comprised of a plurality of intertangled organic fibers.

40. A method according to claim 39, wherein the cleaning article further comprises a plurality of organic particles having a Shore A hardness less than 100, and wherein the binder bonds the organic particles, at least in part, to the first major surface.

41. A method according to claim 39, wherein the cleaning article further comprises a plurality of organic particles having Shore A hardness less than 80, and wherein the binder bonds the organic particles, at least in part, to the first major surface.

42. A method according to claim 39, wherein the cleaning article further comprises a plurality of organic particles having a hardness of at least one of a Shore A hardness in the range from 80 to 100 or a Shore D hardness in the range from 30 to 50, and wherein the binder bonds the organic particles, at least in part, to the first major surface.

43. A method according to claim 39, wherein the cleaning article further comprises a plurality of organic particles having a Shore A hardness in the range from 20 to 80, and wherein the binder bonds the organic particles, at least in part, to the first major surface.

44. A method according to claim 39 further comprising providing a cleaner on the soiled exterior surface to aid in dislodging soil from the soil exterior surface.

45. A method of cleaning a soiled exterior surface of an aircraft, the method comprising:

providing a cleaning article comprising a foam pad, the foam pad having a first major surface and binder on at least a portion of the first major surface, the binder having a T_g not greater than 0°C , said cleaning article further comprising a work surface comprising said binder, and said work surface having a wet kinetic coefficient of friction in the range from 0.3 to 0.9;

frictionally engaging at least a portion of the work surface of the cleaning article with the soiled exterior surface of the aircraft; and

inducing relative motion between the cleaning article and the soiled exterior surface to at least partially dislodge soil from the soiled exterior surface.

46. A method according to claim 45, wherein the cleaning article further comprises a plurality of organic particles having a hardness of at least one of a Shore A hardness in the range from 80 to 100 or a Shore D hardness in the range from 30 to 50, and wherein the binder bonds the organic particles, at least in part, to the first major surface.

47. A method according to claim 45 further comprising providing a cleaner on the soiled exterior surface to aid in dislodging soil from the soil exterior surface.